

# Claims

[c1] What is claimed is:

1. A method of regenerating filter media in a filter, comprising:

adding an alkali medicament into the filter;

introducing air into the filter; and

performing a reverse rinsing process to provide water from a bottom of the filter.

[c2] 2. The method of claim 1, further comprising performing a draining process before adding the alkali medicament.

[c3] 3. The method of claim 1, further comprising performing a sterilizing process.

[c4] 4. The method of claim 3, wherein the sterilizing process is performed along with the reverse rinsing process to add sodium hypochlorite (NaOCl) into the filter.

[c5] 5. The method of claim 3, wherein the sterilizing process is performed until a water solution in the filter has been adjusted to a neutral condition in the reverse rinsing process.

[c6] 6. The method of claim 1, wherein the alkali medicament

is added in accordance with water contained in the filter so as to maintain a pH value of a water solution in the filter between 8.5 and 11.

- [c7] 7. A method of regenerating filter media in a filter, the filter comprising a water solution and the filter media having a plurality of flocs including aluminum ions adhered thereto, the method comprising:  
transforming the aluminum ions in the filter into complex ions carrying negative charges;  
introducing air into the filter to break up the flocs; and  
performing a reverse rinsing process to implant water from a bottom of the filter so that the flocs float up and are drained away from the filter.
- [c8] 8. The method of claim 7, wherein the aluminum ions are transformed into the complex ions by adding an alkali medicament.
- [c9] 9. The method of claim 8, wherein the alkali medicament is added in accordance with water contained in the filter so as to maintain an pH value of the water solution in the filter between 8.5 and 11.
- [c10] 10. The method of claim 8, further comprising performing a draining process before adding the alkali medicament so as to drain the water solution away from the fil-

ter until the water solution reaches a low level.

- [c11] 11. The method of claim 7, further comprising performing a sterilizing process.
- [c12] 12. The method of claim 11, wherein the sterilizing process is performed along with the reverse rinsing process to add sodium hypochlorite (NaOCl) into the filter.
- [c13] 13. The method of claim 12, wherein the sterilizing process is performed until the water solution in the filter has been adjusted to a neutral condition in the reverse rinsing process.